REMARKS

Claims 1-11 are pending in the application.

Rejection Under 35 USC § § 103(a)

Claims 1-11 stand rejected under 35 USC § 103(a) as being obvious over U.S. Patent No. 5,126,393 to Blum et al. (hereinafter "Blum") in view of European Patent Specification 0 159 117 B1 to Hughes et al. (hereinafter "Hughes"). The Examiner maintains that it would have been obvious to use the pyrazole blocking agents disclosed by Hughes in the water dispersible binder compositions disclosed by Blum in order to obtain a coating system that is less expensive to apply.

In the present invention, Applicants looked to address the problem of yellowing and storage stability of resins based on blocked polyisocyanates. Applicants addressed these problems in the present invention. Surprisingly, it was found that polyisocyanates blocked with pyrazole derivatives can be dispersed in a stable manner in water with the aid of polyols containing urethane groups. In this case, the polyols according to the invention and containing urethane groups fulfill the function of an "emulsifier" for the polyisocyanates blocked with pyrazole derivatives. At the same time, however, the polyols containing urethane groups are reactants for the blocked polyisocyanates. After the blocking agent has been split off at elevated temperature, the OH groups crosslink with the functional groups of the polyisocyanate crosslinking agents then liberated. (See page 2, lines 9-21 of the specification).

As such, the present invention provides a waterborne coating composition in the form of a dispersion in water and optionally organic solvents. The composition includes at least one polyol having urethane groups and chemically bound hydrophilic groups, and at least one polyisocyanate having no chemically bound hydrophilic groups and which is blocked with pyrazole derivatives.

Blum discloses a water-dispersible binder composition which contains a urethane-modified polyester resin containing carboxyl groups, a crosslinker resin and an optional emulsifier. The urethane-modified polyester resin is produced by reacting a polyester polyol having a hydroxyl value of 130 to 200 with a 2,2-bis-(hydroxy-methyl)alkanecarboxylic acid or a quantity corresponding to this quantity of acid of a tertiary amine salt of such acid and at least one cycloaliphatic diisocyanate

having a molecular weight of 166 to 294. Blum is silent regarding pyrazole type blocking agents.

Hughes discloses a polyisocyanate blocked using pyrazole derivatives. Hughes indicates that the advantage of pyrazole blocked polyisocyanates is that they will react at lower temperatures than polyisocyanates blocked with other compounds.

The Examiner has maintained the position that it would have been obvious to utilize the pyrazole blocking agents of Hughes within the water-dispersible binder of Blum in order to obtain a coating system that is less expensive to apply. In support of his position, the Examiner cites In re Linter, 458 F.2d 1013 (CCPA 1972) and In re Dillon, 919 F.2d 688 (Fed. Cir. 1990) *cert. denied*, 500 U.S. 904 (1991).

In *In re* Linter, the prior art disclosed using sugar in conjunction with a cationic softener as a filler or weighting agent, while the claimed composition in Linter used sugar to improve the compatibility of the cationic softener and the detergent, i.e., the compositions were the same. Linter, 458 F.2d at 1015.

In *In re* Dillon, the prior art showed that tri-orthoesters and tetra-orthoestes could be used interchangeably in hydrocarbon fuels, which was the subject matter of Dillon's application. Dillon, 919 F.2d at 692.

However, where the methodology or chemistry in the claims differs from that disclosed in the prior art, the application of Dillon is not proper. *In re* Ivax Industries, Inc., 1998 U.S. App. Lexis 8036 (Fed. Cir. 1998). In Ivax, the use of pumice in stonewashing was not *prima facie* obvious for using cellulose in stone washing. Likewise, the facts of this case are outside the scope of *In re* Dillon.

The present invention is based on the observation that polyisocyanates blocked with pyrazole derivatives can be dispersed in a stable manner in water with the aid of a polyol (component A). The polyol fulfils the function of an emulsifier for the blocked polyisocyanate.

Blum et al. discloses that first the urethane-modified polyester is prepared in organic solution. In a next step, the organic solution is mixed with water (to provide a dispersion) and subsequently, a crosslinker is added (see column 2, lines 41 to column 3, lines 19 and Example 3, column 9, lines 6-22).

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In contrast, according to the present invention (see for example Claim 8), the polyisocyanate is added to the polyol before or during the conversion thereof to the aqueous phase.

Applicants submit herewith a Declaration Under 37 C.F.R. § 1.132 by Dr. Martin Melchiors, one of the present inventors, which shows that it is not possible to obtain a stable dispersion based on polyisocyanates which are blocked with pyrazole derivatives, if the dispersions are prepared according the teachings of Blum. In other words, if the polyisocyanate is added to the dispersion.

In a first comparison, a blocked polyisocyanate was prepared according to the invention (see example B1) from which an aqueous dispersion of the blocked polyisocyanate and a polyol containing urethane groups was prepared. Also, as a comparative example, a dispersion of a urethane-modified polyester resin without blocked polyisocyanates according to Blum was prepared.

The dispersions were formulated into clear coat compositions and coatings thereof were evaluated. The dispersion according to the invention provided a coating film with satisfactory appearance, good pendulum hardness and good solvent resistance. On the other hand, the comparative dispersion provided a coating film that had a strongly structured surface and insufficient film formation to the point that appearance, hardness and solvent resistance could not be evaluated.

In a second comparison, the dispersions were formulated into waterborne stoving primer surfacers. The dispersion according to the invention provided a coating film with superior gloss, hardness and appearance compared with a coating film prepared using the comparative dispersion.

The comparative examples demonstrate that adding the unblocked polyisocyanate directly to the dispersion as required in Blum does not provide the waterborne coating composition in the form of a dispersion as presently claimed.

The present invention is directed to a waterborne coating composition that includes a polyurethane polyol that contains hydrophilic groups and a polyisocyanate, free of hydrophilic groups, blocked with a pyrazole.

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Blum discloses binder compositions that include urethane-modified polyester resin containing carboxyl groups that are made from polyester polyols and crosslinking agents that can include blocked polyisocyanates, pyrazole blocked polyisocyanates not being disclosed.

Hughes, on the other hand, describes electrodeposition coating, which operates very differently from the stoving compositions of the present invention and in Blum.

There is no motivation in Hughes to use pyrazole blocked polyisocyanates in anything but electrodeposition coatings or to make substantial changes to the methodology in Blum (for example, adding the polyisocyanate to the dispersion). Stoving compositions are not mentioned at all in Hughes. Further, Blum mentions blocked isocyanates generally, but prefers melamine and urea resins. Thus, there is no motivation in Blum to scour the literature for other agents to block polyisocyanates with or to make substantial changes to the preparation method.

The Examiner's rationale is that motivated to provide a coating system that is less expensive to apply *per se*, one skilled in the art would make the suggested combination. However, what is less expensive in electrodeposition coatings, would not provide motivation for what is less expensive in stoving compositions or for making drastic changes to the preparation method. Additionally, Applicants sought to provide a non-yellowing, storage stable resin based on blocked polyisocyanates in stoving compositions. These performance criteria have nothing to do with the cost to apply an electrodeposition coating.

The differences in chemistry, preparation, and application between Hughes and Blum negate any motivating suggestion by the Examiner to combine as well as his use of *In re* Linter and *In re* Dillon.

As such, one skilled in the art would not look to electrodeposition coatings that cost less to apply in order to discover blocked isocyanate resins that do not yellow, change their method of preparation, in order to provide storage stable stoving compositions.

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The Examiner has failed to provide a nexus between the disclosures of Blum and Hughes that would motivate a skilled artisan looking to discover blocked isocyanate resins that do not yellow and that are storage stable in stoving compositions in order to modify the references as the Examiner has.

The Examiner has used Applicants invention as a template to combine prior art references in order to allege obviousness, which is not proper. Further, Applicants comparative data demonstrate the inoperability of Blum. There is no disclosure in Hughes to overcome the shortcomings in Blum. Therefore, Claims 1-11 are not obvious over the combination of Blum and Hughes and the rejection under 35 U.S.C. § 103(a) should be withdrawn.

In view of the above remarks, reconsideration of the rejections and allowance of Claims 1-11 are respectfully requested.

Respectfully submitted,

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